(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 29 September 2005 (29.09.2005)

PCT

US

(10) International Publication Number WO 2005/090913 A1

(51) International Patent Classification⁷:

G01C 19/56

(21) International Application Number:

PCT/US2005/008081

(22) International Filing Date: 11 March 2005 (11.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/552,652 12 March 2004 (12.03.2004)

(71) Applicant (for all designated States except US): GYRATION, INC. [US/US]; Building C, 12950 Saratoga Avenue, Saratoga, CA 95070 (US).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): HOTELLING, Steven, Porter [US/US]; 1351 Hidden Mine Road, San Jose, CA 95120 (US). BAYER, Lex [ZA/US]; 691 Roble Avenue, #4, Menlo Park, CA 94306 (US). LAND, Brian, R. [US/US]; 2726 Sussex Way, Redwood City, CA 94061 (US).
- (74) Agents: TRIPOLI, Joseph, S. et al.; Two Independence Way, Suite #200, Princeton, NJ 08540 (US).

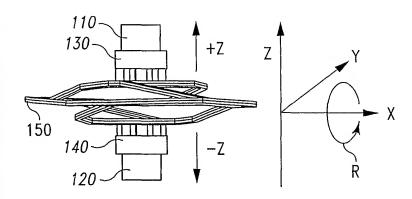
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DUAL AXIS VIBRATORY RATE GYROSCOPE



(57) Abstract: A dual-axis rotational rate sensor having two vibratory masses coupled to a restoring element and driven in a resonant counter-phase motion, wherein the two masses vibrate with equal but opposite amplitudes along a single axis. The vibratory structure also accommodates motion of the masses in a plane orthogonal to the vibratory axis. Measurement of the motion of the masses in two axes in this plane provides signals directly responsive to rotation of the sensor about two orthogonal axes. Measurement and drive is facilitated by the use of magnetic masses and electromagnetic drive and sense transducers.

WO 2005/090913 A1